Center for Research,
Development and Transfer

Technische Hochschule Rosenheim

HS'BI Hochschule Bielefeld
University of Applied Sciences and Arts

25 + 26/02/2025

Technical University of Munich

All-Sky Imager
Workshop 2025

Online (Zoom): **Meeting-ID: 692 5406 3370**
Meeting-Passcode: 447529

(Link: https://th-rosenheim.zoom-x.de/j/69254063370?pwd=aBhJ1ErLzqrO2x3poxuaonj0IbSWwC.1)

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Day 1

Program – Tuesday, February 25th 2025

START OF WORKSHOP – DAY I
OPENING SESSION

09:00 – 09:15	**Welcoming Address** *Prof. Dr.-Ing. Grit Behrens, Alexander Kruse* *Prof. Mike Zehner, Andreas Boschert* Bielefeld University of Applied Sciences Technical University of Applied Sciences Rosenheim
09:15 – 09:45	**Best Practice Handbook for the Collection and Use of Solar Resource Data for Solar Energy Applications: Fourth Edition (Online)** *Jan Remund* Meteotest AG – Head of Energy & Climate International Energy Agency: Photovoltaic Power Systems Programm Task 16: Solar Resource for High Penetration and Large Scale Applications
09:45 – 10:00	Networking Break

ALL SKY IMAGER IN FOCUS: RELIABLE SYSTEMS AND AFFORDABLE HARDWARE

10:00 – 10:20	**On the design of Eye2Sky camera network subsets for the optimal nowcast of PV production** *Andre Scheper* German Aerospace Center – Institute of Network Energy Systems
10:20 – 10:40	**Quality control methods and their evaluation in nowcasting of All-Sky Imager network (Eye2Sky)** *Arne Goerlitz* German Aerospace Center – Institute of Network Energy Systems Carl-von-Ossietzky University of Oldenburg
10:40 – 11:00	**Geometric Calibration of All-Sky Cameras Using Sun and Moon Positions: A Comprehensive Analysis (Online)** *Yann Fabel* German Aerospace Center – Solar Research Institute
11:00 – 11:20	**The potential of low-cost cameras for citizen science and data assimilation (Online)** *Dr. Leonhard Scheck* Hans-Ertel-Zentrum für Wetterforschung / LMU München
11:20 – 11:40	**Autonomous All-Sky Cameras for Optimized Control of Photovoltaic Battery Storage Systems** *Paul Matteschk* Wematics FlexCo.
11:40 – 12:40	Lunch Break

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PUBLICLY AVAILABLE ALL-SKY IMAGER-DATASETS

12:40 – 13:00	**The Eye2Sky all-sky imager network and its data availability** *Thomas Schmidt* German Aerospace Center – Institute of Network Energy Systems
13:00 – 13:20	**SkyImageNet: A large scale sky image database for solar energy meteorology (Online)** *Dr. Quentin Paletta* European Space Agency
13:20 – 13:30	Networking Break

AI-APPLICATIONS ON SKY IMAGES

13:30 – 13:50	**Synthetic sky image datasets for training AI models** *Max Aragon* Mines Paris PSL
13:50 – 14:10	**A new fast method for simulating all-sky images – Enabling a virtual benchmark suite for nowcasting and other applications?** *Philipp Gregor* Meteorologisches Institut, Ludwig-Maximilians-Universität München
14:10 – 14:30	**Deep Learning Approach for Cloud Classification from All-Sky Images** *Yassine Ribouh and Naoufal EL Atmioui* Bielefeld University of Applied Sciences
14:30 – 15:00	**Estimating Global Horizontal Irradiance and Cloud Base Height from All-Sky Images Using a Deep-Learning Approach** *Alexander Kruse* Bielefeld University of Applied Sciences
15:00 – 15:30	Networking Break

Note: The event will take place in a hybrid format. All presentations will be streamed online, even those held on-site. All timetables in this brochure are in Central European Time (CET).

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SOLAR FORECASTING AND RESEARCH GAPS

15:30 – 15:50	**Deep Learning-Based PV Power Forecasting with Cloud Cover Estimation Using All-Sky Images in Thailand (Online)** *Dr. Chamnan Limsakul* King Mongkut's University of Technology Thonburi
15:35 – 15:55	**Short-Term Solar Irradiance Forecasting Using All-Sky Imagers: A Hybrid Artificial Intelligence Approach** *Khadija Barhmi* Utrecht University, Copernicus Institute of Sustainable Development
15:55 – 16:15	**ASI evaluation of irradiation enhancement and impact on photovoltaic yield (Online)** *Dr. Marcus Rennhofer* Austrian Institute of Technology (AIT)t
16:30 – 16:45	**Review of the first event day** *Prof. Mike Zehner* Technical University of Applied Sciences Rosenheim

At the end of the workshop day I, we invite all participants to join us for a Networking Dinner. This informal gathering offers a relaxed setting to connect with fellow experts, exchange ideas, and engage in discussions about the future of solar forecasting and related technologies.

Please register separately on the day of the event, as we have to reserve tables for the number of participants

INFORMAL DINNER GATHERING (Self-Paid) *Separate registration required

18:30 – 19:00	**Tour through the historic city centre of Rosenheim**
from 19:00	**Flötzinger Bräustüberl, Samerstraße 17, 83022 Rosenheim**

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Day 2

Program – Wednesday, February 26th 2025

START OF WORKSHOP – DAY II
SOLAR IRRADIANCE

09:00 – 09:15	**Welcoming Address** *Prof. Dr.-Ing. Grit Behrens, Alexander Kruse* *Prof. Mike Zehner, Andreas Boschert* Bielefeld University of Applied Sciences Technical University of Applied Sciences Rosenheim
09:15 – 09:35	**Irradiance Dynamics: Insights into Gradients, Spikes, and Cloud Phenomena** *Prof. Mike Zehner* Technical University of Applied Sciences Rosenheim
09:35 – 09:55	**PyranoCAM: A Novel, Accurate, and Robust System for Measuring DNI, DHI, and GHI (Online)** *Dr. Niklas Blum* German Aerospace Center – Solar Research Institute
09:55 – 10:15	Networking Break

COMPANY PITCHES

10:15 – 10:35	• CMS Ing. Dr. Schreder GmbH / EKO Instruments • Reuniwatt • WEMATICS – Weather Informatics

MEASUREMENT CAMPAIGN AND RESEARCH GAPS

10:35 – 10:55	**Temporally Parallel Hemispheric Recordings at Five Locations in the Greater Vienna Area: Measurement System and Data Analysis (Online)** *Univ. Prof. Mag.rer.nat. Dr.rer.nat. Philipp Weihs* Universität für Bodenkultur Wien
10:55 – 11:15	follows
11:15 – 11:35	follows
11:35 – 12:00	**Closing words and Evaluation** *Prof. Dr.-Ing. Grit Behrens* Bielefeld University of Applied Sciences